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Re:	Docket No. 54251	**cc:**	

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• **Comments:**

In re Application of: CIPRIAN, et al.
Serial No.: 10/765,988
Filing Date: January 29, 2004

Attachments: **COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION		DOCKET NO.:	PF++54251
OF:	CIPRIAN ET AL.	CONFIRMATION NO.:	2865
SERIAL NO.	10/765,988	GROUP ART UNIT:	1624
FILED:	JANUARY 29, 2004	EXAMINER:	Z. C. TUCKER

FOR: DECOLORATION AND COLOR STABILIZATION OF TEDA SOLUTION

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COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Sir:

The following Comments are made in view of the Examiner's Statement of Reasons for Allowance enclosed with the Notice of Allowance issued on February 23, 2006.

C O M M E N T S

The Examiner inter alia remarked that the closest prior art *Lang et al.* (US 6,552,194) taught some different solvents as TEDA quench liquids and suggested that polyhydric alcohols could be employed for that purpose. For clarification the following is respectfully noted.

Lang et al. as well as applicants invention relate to a process for the preparation of highly pure triethylenediamine (TEDA) or solu-

tions thereof. The processes are similar with regard to the initial steps, ie. vaporizing TEDA and quenching the TEDA vapor in a solvent.

Lang et al. propose a variety of possible solvents for this purpose, including aliphatic, chlorinated and aromatic hydrocarbons, alcohols, ethers and polyether alcohols.[1] Where the TEDA solution is to be used directly as a catalyst solution for the production of polyurethane foam it is necessary that the solvent be an alcohol or a polyetheralcohol and, additionally, that the solution have a low color number. According to *Lang et al.*, a solution of 33% weight of TEDA quenched in dipropylene glycol has a color number of less than 150, preferred less than 100 APHA.[2] In order to arrive at highly pure TEDA and at TEDA solutions which exhibit lower color numbers, further purification of the TEDA solution is required.

According to *Lang et al.*, this additional purification can be achieved by crystallization of the TEDA from the solution, and the recrystallized TEDA can be redissolved for further use.[3] Where the crystallization of the TEDA is intended, the solvent used for the TEDA quench is preferably an aliphatic hydrocarbon.[4]

The process disclosed and claimed by applicants solves the problem of preparing a TEDA solution in alcohols/polyether alcohols which exhibit low color numbers and long stability during storage by quenching the TEDA vapor directly in the alcohol/polyether alcohol and by subsequently treating the TEDA solution with adsorbents.[5] After the adsorbents have been removed from the TEDA solution, the solutions can be used further without an additional purification being necessary. The TEDA solutions which are obtained in accordance with applicants' procedure exhibit low color numbers (50 APHA) and long storability without large changes of the color numbers.[6] Applicants' process has the advantage that the amount of solvent which is needed to obtain TEDA solutions meeting the requisite purity requirements are significantly reduced.

The foregoing explanations show that applicants' process is distinctly different from the procedure which is disclosed by *Lang et al.*

1) Cf. col. 4, indicated lines 46 to 64, of *US 6,552,194*.
2) Cf. col. 4, indicated line 65, to col. 5, indicated line 5, of *US 6,552,194*.
3) Cf. col. 2, indicated lines 65 to 68, of *US 6,552,194*.
4) Cf. col. 5, indicated lines 6 to 10, of *US 6,552,194*.
5) Cf. page 4, para. 3, of the application.
6) Cf., e.g., Examples 3 to 5, pages 13 to 15, of the application.

Serial No. 10/765,988 CIPRIAN et al. PF++54251

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Respectfully submitted,
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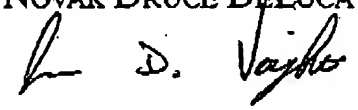

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